CORRES. CONTROL
OUTGOING LTR. NO.
DOE ORDER # 4700.1
04-RF-00693

DIST.	LTR	ENC
DIETER, T.		
FERRERA, D.W.	X	
LINDSAY, D.		
LYLE, J.		
MARTINEZ, L. A.		
PARKER, A.		
PIZZUTO, V.		
SHELTON, D.C.		
SPEARS, M.S.		
TUOR, N. R.		
BEAN, C.		
BUTLER, J. L.		
DECK, C.		
FRANCIS, M.		
FREIBOTH, C.		
GEIS, A.		
GIBBS, F.	X	
HUME, J.		
HUMISTON, T.		
HUNTER, D.		
KNAPP, S.		
LINSINBIGLER, H.		
MARSCHALL, J.R.		
MYERS, K.		
NESTA, S.	X	X
O'BRIEN, J.J.		
OMAN, K.		
PLAPPERT, R.		
PRIMROSE, A.		
RICHARDELLA, R.	X	X
ROSENMAN, A.	X	X
SNYDER, D.P.		
SWARTZ, J.M.		
WIEMELT, K.		
SELAN, J.		
KOHLER, K	X	X
CORRES.CONTROL	X	X
ADMIN RECRD/T130G	X	X
TRAFFIC		
PATS/130		

CLASSIFICATION:

UCNI		
UNCLASSIFIED		
CONFIDENTIAL		
SECRET		

AUTHORIZED CLASSIFIER SIGNATURE:

Date:

IN REPLY TO RFP CC NO.:

ACTION ITEM STATUS:
☐ PARTIAL/OPEN
☐ CLOSED

LTR APPROVALS:

ORIG. & TYPIST INITIALS:
SMN:pvt

RF-46469(Rev.9/94)

KAISER•HILL COMPANY

June 29, 2004

04-RF-00693

Gary Morgan, Functional Lead
Cadre Project Management Division
DOE, RFPO

RSOP FOR COMPONENT REMOVAL, SIZE REDUCTION, AND DECONTAMINATION ACTIVITIES NOTIFICATION LETTER FOR RCRA CLOSURE OF B559 GLOVEBOXES FEG-020-04

As part of building D&D in B559, gloveboxes were removed as low level waste. This activity occurred without formal notification to CDPHE for RCRA closure on these glovebox units. Attached is the information that would have been provided in the RSOP notification for component removal, size reduction, and decontamination, including RCRA closure. The information demonstrates that these units were closed in accordance with the substantive requirements of the RSOP and applicable regulations for meeting debris treatment allowing the gloveboxes to be managed as straight low level waste.

This information needs to be transmitted to CDPHE for applicable follow-up information from the fact finding on this issue as well as RSOP concurrence. RCRA issues under RFCA have a 30 day review time.

Please contact Steve Nesta x6386 with questions or concerns.

Frank E. Gibbs
Deputy Project Manager
Remediation, Industrial D&D, and Site Services

Attachment:
As Stated

SMN:pvt

Orig. and 1 cc – Gary Morgan

cc:
Joseph Legare

RECEIVED
JUL - 1 2004

ADMIN RECORD

Kaiser-Hill Company, L L C
Rocky Flats Environmental Technology Site, 10808 Hwy. 93 Unit B, Golden, CO 80403-8200 • 303-966-7000

559 GLOVEBOXES

BACKGROUND

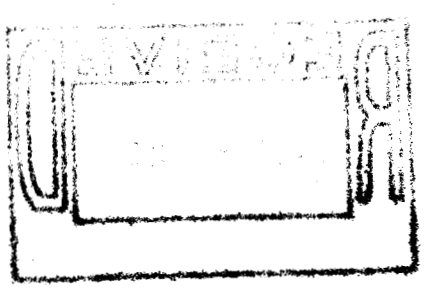
Closure information concerning the following gloveboxes, from Building 559, should have been submitted to CDPHE in a CDD like document under an RSOP Notification Letter (Component Removal, Size Reduction and Decontamination Activities) for RCRA Closure activities. The referenced gloveboxes are **C40** –Treatment Unit S002, **C17** – Storage Unit 559.1, **M21**, **M23**, and **M36** – Mixed Residue Storage Unit 90.102, and **E11**, **E12**, **E13**, **E18**, **E20**, and **E22** – Mixed Residue Storage Unit 90.29. Although appropriate notification was not completed, the following narrative demonstrates that these units were closed in accordance with the substantive requirements of RSOP and applicable CDPHE regulations.

All gloveboxes were decommissioned under Work Packages that were established for various sets. The following work packages apply to the specified gloveboxes:

- Set 4, Work Package T0108532 – Gloveboxes M23 and M36
- Set 5, Work Package T0108533 – Glovebox C17
- Set 7, Work Package T0109861 – Gloveboxes E11, E12, E13, E18, E20, and E22
- Set 8, Work Package T0109865 – Glovebox C40
- Set 9, Work Package T0109869 – Glovebox M21

All of the referenced work packages have the following steps included:

1) Clean out glovebox.
   a) This step directed that all accountable fissile material, miscellaneous lab waste, and loose lab equipment be removed. An initial wipe down of the glovebox was performed following glovebox clean out as part of housekeeping efforts, utilizing KW solution.
2) Perform pre and post decontamination surveys as required to meet SCO and/or Nuclear Material Control and Accountability criteria.
3) Decontaminate glovebox.
   a) This step directed decontamination in accordance with PRO-836-559-GB-001, as applicable and L4029B (Chemical Hygiene Plan, attached). Decontamination solutions may have included cerium nitrate and or KW solution.
   b) Decontamination could be repeated based on scan values and applicable acceptance criteria as required by Safeguards and Radiological Engineering.
4) Encapsulate glovebox with polymer based product.
   a) This step directs the glovebox to be encapsulated allowing 8-12 hours between first and second application.
5) Disassemble/Remove the leaded glass windows, lead shielding, lead gloves, and lead tape as applicable.



INDIVIDUAL GLOVEBOXES

PERMITTED UNITS

Glovebox C40 – Treatment Unit S002 Oil and/or Aqueous Solidification Process

- Part of Set 8, Work Package T0109865
- The NoChar process was performed as follows: the liquid was poured into a double plastic bag containing NoChar.
- Inspection records from 10/03 to 2/04 were reviewed and indicate no spills or releases.
- Glovebox was encapsulated with FireDam™ fixative.
- Loaded into X33560 and shipped to NTS.

CONCLUSION

This glovebox was permitted for the no-char treatment process (S002) in October 2003, and only operated as a treatment unit until February 2004. All of the inspection records indicate there were no spills or releases. Therefore, the site proposes that this unit be administratively closed based on the review of inspection and laboratory records. Additionally, the glovebox was encapsulated with two layers of FireDam™.

Glovebox C17 – Permitted RCRA Storage Unit 559.1

- Part of Set 5, Work Package T0108533
- Inspection records from 8/91 to 7/03 reviewed.
  a) Missing 8/97 to 4/98 and 8/94. Chances of a spill occurring during these missing periods is minimal.
  b) One spill noted on 1/16/96 of 2 mls from X00827, waste type REM, PU waste, D002, cleaned up on 1/16/96.
  c) See attached White Paper – Lab Cleanup Procedure and Analytical Laboratory Procedure L-4029-B, Section 11, Chemical Spills, Releases, and Accidents for how spills or releases were handled.
- Decontaminated with a KW wipe down.
- Pre decontamination average survey activity = 79,071,730 dpm/100cm^2
- Post decontamination average survey activity = 38,670,000 dpm/100cm^2
- Glovebox was encapsulated with FireDam™ fixative.
- Loaded into X32317 and shipped to NTS.

CONCLUSION

This glovebox was permitted for storage of waste with the following EPA codes: D002, D004-D011, D034 (RFETS RCRA Permit Part A Application, Rev. 98-1). According to laboratory procedures any potential spills were cleaned up and decontaminated in order to prevent cross-contamination. Therefore, the site proposes that this unit could be closed in accordance with Debris Rule Decontamination, and met the definition of a "Clean Debris Surface" as per the RSOP for **Component Removal, Size Reduction and Decontamination Activities, Section 5.1.2**. Additionally, the glovebox was encapsulated with two layers of FireDam™, which is an approved encapsulant for RCRA characteristic waste.

MIXED RESIDUE STORAGE

Unit 90.102 – RCRA Closure Plan for Mixed Residue Container Storage Units – Gloveboxes M21, M23, and M36.

- CDPHE allowed the closure of these gloveboxes to be deferred until building D&D (12/19/1996). No inspections were required.
- A WEMS query shows that the only EPA hazardous wastes managed in the unit were D002 and D011.
- M21 part of Set 9, Work Package T0109869
- M23 and M36 part of Set 4, Work Package T0108532
- Historical information indicates that no organics were used in glovebox M21 (see attached reference from Laboratory Manager).
- Historical information indicates glovebox M23 was used to prepare samples for isotopic mass spec analysis, again with no organics involved (use of concentrated mineral acids and 30% peroxides only).
- Historical information indicates that glovebox M36 was used to transfer samples from one glovebox to another, or from one container to another. These samples did not involve any organics.
- All gloveboxes were encapsulated with FireDam™ fixative.
- M21 loaded into X34737 and in unit 559-4174-outside
- M23 loaded into X30821 and shipped to NTS
- M36 loaded into X30551 and shipped to NTS

Unit 90.29 – RCRA Closure Plan for Mixed Residue Container Storage Units – Gloveboxes E11, 12, 13, 18, 20, and 22.

- CDPHE allowed the closure of these gloveboxes to be deferred until building D&D
- A WEMS query shows that the only EPA hazardous wastes managed in the unit were D002, D006, D007 and D008
- (12/19/1996). No inspections were required.
- Part of Set 7, Work Package T0109861.
- Historical information indicates that gloveboxes E11, 12, and 13 were used to prepare samples for metal analysis using inorganic acids and peroxides.
- Historical information indicates that glovebox E18 was used for storage of waste containers and samples after analysis.
- Historical information indicates that glovebox E20 was used for storage of metal TCLP extraction samples, with no chemical additions being made in this glovebox.
- Historical information indicates that glovebox E22 was used for mercury analysis, which involved only inorganic chemicals.
- All gloveboxes were encapsulated with FireDam™ fixative.
- E11, 12, and 13 loaded into X34674 and is in unit 559-4174-outside.
- E18 and 20 loaded into X34675 and is in unit 559-4174-outside.
- E22 loaded into X34711 and is in unit 559-4174-outside.

CONCLUSION

Containers of mixed residue solids were stored in these gloveboxes, until they could be bagged out and properly containerized in permitted storage units. The gloveboxes were not used for any processing activities associated with the mixed residues; all processes prior to and after storage of the residues were associated with various laboratory activities. Based on the closure summary for these gloveboxes (1996), these gloveboxes failed due to staining of the teflon surface, which was attributed to mineral acid spills from the analytical processes that occurred in the gloveboxes

during the previous 30 years. However, based on laboratory personnel statements, all analyses or preparation for analyses in these gloveboxes involved non-organic compounds.

Therefore, the Site believes the gloveboxes only had the potential to be hazardous for characteristic wastes (not associated with the storage of the mixed residues), and it is the Site's belief is that the gloveboxes should have been dropped from the consent agreement by administrative closure once the mixed residues were bagged out of the gloveboxes. Additionally, the gloveboxes were treated through the use of FireDam™ as a fixative.

White Paper – Lab Cleanup Procedure

6/14/04

During any laboratory operation Good Laboratory Practices (GLP) were always followed. These practices were part of the laboratory's program to ensure high quality analytical results and safe working conditions to the laboratory personnel.

References to cleaning up spills and keeping the laboratory work area clean are in the laboratory's Chemical Hygiene Plan, L-4029-B. Chapter 4, Basic Laboratory Rules, General Operations, bullet four states "At the completion of each workday or operation, clean and organize the work area. Chemicals used for the day SHALL be properly stored." Chapter 11 is devoted to the proper response for Chemical spills, releases and accidents.

Good laboratory practices dictated that whenever a spill occurs, that spill is cleaned up immediately. This is to minimize the following:

- The possibility of any cross-contamination between samples currently in process.
- The possibility of any contamination during the processing of future samples.
- The risk to workers since a wide range of chemicals are in use that may be reactive if mixed with other chemicals, be corrosive and/or carcinogenic.

Without following GLP, including cleaning up spills, the laboratory would have not been able to maintain its high level of quality. The Performance Demonstration Program (PDP) samples analyzed, as part of the WIPP qualifications, and the daily QA samples and blanks analyzed give an indication of the work areas in the laboratory. These types of results could not been achieved without keeping the work area clean.

Besides GLP, 40CFR-262.34 D5ii for Small RCRA Generators and 29CRF1910.1450 appendix A, Spill Control, mandate cleanup of spills.

The laboratory used Chemical Technicians Ready Reference Handbook, 3rd ed., to train our technicians. This book, under Chapter 3, General Guidelines, also states that any spill should be cleaned up immediately.

COPY NO.

Rocky Flats Environmental Technology Site

Analytical Laboratory Procedure

LABORATORY CHEMICAL HYGIENE (LCH) PLAN RADIOLOGICAL LABORATORIES BUILDING 559

L-4029-B

Author:	/s/ Stephen Lappi Stephen Lappi	11/18/02 Date	
Peer Reviewer:	/s/ Robert Shannon Signature	11/19/02 Date	
Approved by:	/s/ Mark Brush	Date: 12/17/02	Responsible Lab Manager
Approved by:	/s/ J. P. O'Brien	Date: 11/19/02	Facility Manager
Approved by:	/s/ Stewart Podolsky	Date: 11/18/02	Quality Assurance Coordinator
Concurred by:	/s/ Stephen Lappi	Date: 11/18/02	Industrial Hygiene and Safety
Concurred by:	/s/ Nancy Jensen	Date: 11/19/02	Chemical Control Officer
Concurred by:	/s/ James Selan	Date: 11/19/02	Nuclear Safety
Concurred by:	/s/ Stephen Lappi	Date: 11/18/02	Chemical Hygiene Officer
Concurred by:	/s/ Susan K. Omberg	Date: 11/19/02	Fire Protection

Responsible Organization: Analytical Laboratory
Applicable to: Building 559 Complex
Effective Date: 01/09/03
This procedure supersedes L-4029-A
Periodic review frequency: 4 years

SES/USQD: SES-559-03.0376-JCS
SISR: 02-10

4.0 BASIC LABORATORY RULES

4.1 General Operations

- Before any new operation, seek information and update procedure and advise about possible hazards, update procedure JHA, personal protective equipment requirements, and the safe positioning of laboratory equipment or apparatuses.
- Be alert to unsafe conditions and ensure notification of appropriate personnel for action when necessary.
- Label all chemicals and equipment in accordance with *MAN-072-OS&IH PM,* and the LCH Plan.
- At the completion of each workday or operation, clean and organize the work area. Chemicals used for the day **SHALL** be properly stored.

4.2 Non-routine Operations

- Non-routine laboratory operations that present specific, foreseeable hazards to the employees must have prior supervisory approval.

4.3 Laboratory Glassware Safety

- Handle and store all glassware in a manner that will minimize breakage.
- Dispose of all cracked, chipped, broken, or unserviceable glassware in the proper waste container(s). Never use damaged glassware.
- Wear gloves and eye protection when working with glass tubing.
- Lubricate glass with glycerin or water before inserting in stoppers, or rubber/Tygon tubing.
- Remove glass tubing or thermometers from corks, stoppers, or tubing by cutting the stopper away from the glass with a sharp knife.
- Handle glass beakers by grasping them around the sides for support. Do not grasp from the top.
- Be alert when handling beakers full of caustic or hot fluids. The bottom of the beaker may drop out.
- Place thermally hot glassware in a safe location, where it will not be accidentally touched. Use appropriate tongs to handle the glassware.

11.0 CHEMICAL SPILLS, RELEASES, AND ACCIDENTS

11.1 Definitions

RELEASE means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, or dumping in any building/containment or to the environment.

An ***INCIDENTAL RELEASE*** includes those leaks, spills, or other releases where the substance can be safely absorbed, neutralized, or otherwise safely controlled by employees or maintenance personnel in the immediate release area at the time of the release. It also includes releases of hazardous substances for which there are no potential safety or health hazards (i.e., fire, explosion, or chemical exposure) above the normal operating conditions in the work area. If a release requires use of additional personal protective equipment (e.g., chemical cartridge respirators) not used during normal work activities, then it would not be deemed incidental.

A release requiring an ***EMERGENCY RESPONSE*** involves a response effort by employees from outside the immediate release area or by other designated responders (e.g., HAZMAT Team or Radiological Assistance Team) to an occurrence that results, or is likely to result, in an uncontrolled release of a hazardous substance (or unknown).

NON-EMERGENCY UNPLANNED EVENTS include but are not limited to:

1) Non-life threatening health and safety situations
2) Nuclear safety infractions or releases
3) Disregard of audio and/or visual alarms or alarm failures
4) Loss or damage of government property
5) Process out-of-tolerance conditions
6) Any problem with proper contamination control.
7) Incidental spills or releases that can be absorbed, neutralized, controlled, and do not pose a safety or health threat to employees as determined by the employees supervisor and/or IH&S.

11.2 Chemical Release

NOTE: THE TYPE OF RESPONSE ACTIONS TO SPILLS, LEAKS, OR OTHER RELEASES OF HAZARDOUS CHEMICALS, HAZARDOUS MATERIALS, HAZARDOUS SUBSTANCES, OR AN UNKNOWN IS DEPENDENT ON WHETHER THE RELEASE REQUIRES AN INCIDENTAL OR EMERGENCY RESPONSE. ANY INITIAL ACTION TAKEN DURING AN INCIDENTAL OR EMERGENCY RESPONSE SHALL BE CONSISTENT WITH FIRE DEPARTMENT OPERATING PROCEDURES AND INSTRUCTIONS # 3-FP-SOI-1007, RESPONSE LEVEL CLASSIFICATIONS. IF ANY UNCERTAINTY EXIST TO RESPONSE ACTIONS, CALL 2911.

Non-Emergency Response Required Actions
For non-emergency responses, employees **SHALL** notify the first available supervisory person (i.e., your immediate supervisor, or the Control Configuration Authority, Facility Manager, or Shift Supervisor at x2914.)

Non-emergency response action(s) by lab employee(s) **SHALL** only be taken if the employee(s) has been properly trained, is wearing the appropriate PPE(See MSDS) and can perform the cleanup in a safe manner (see MSDS), without endangering himself/herself or others. All spills of carcinogens or highly toxic substances must be evaluated by industrial hygiene for proper response procedures.

Emergency Response Required Actions
For any release requiring an emergency response, the employee **SHALL** move to a safe location, secure the area and notify others, and immediately notify supervision. The chronological order for completing these tasks is dependent on the situation or as directed by supervision. The Control Configuration Authority will make any additions notifications required by the Building Emergency Response Manual.

12.0 LCH PLAN AUDIT

It is the responsibility of the Radiological Laboratories to review, on a yearly basis, the LCH Plan, and provide results to laboratory supervision, and Industrial Hygiene. Laboratory supervision is responsible for taking corrective action.

10

Myers, Kim

From: Brugh, Mark
Sent: Tuesday, June 15, 2004 4:44 PM
To: Nesta, Stephen; Myers, Kim
Cc: Richardella, Robert; Jensen, Nancy
Subject: Boxes - uses through the '90s

Steve:

Here is the uses for each box during the 90's till lab closure:

Rm 101

E-11, E-12, E-13 - These boxes were used to prepare samples for metal analysis. Metals preparation involved mineral acids and peroxide.
E-22 - this box was used for mercury analysis. Mercury is measured using inorganic chemicals: potassium permanganate solution, potassium persulfate solution, sodium chloride-hydroxlamine sulfate solution and stannous chloride solution.
E-20 - this box was used for storage and metal TCLP extraction (extracted with acetic acid solution). No chemical additions were made in this box the bottles were rotated in this box.
E-19 - We installed a microwave extractor in this box. Only testing was done with the microwave involving mineral acids. The box was mostly used for storage.
E-18 - a box used for storage of waste bottles and samples after analysis.

Rm 102
C-17 - Early 90's to the mid 90's this was a Uranium analysis area. Not much work. Inorganic chemicals used.
C-40 - Wet chemistry (titrations. etc.) for Uranium performed. Not much work performed. Inorganic chemicals used. In 2002/3 became the location for NoChar and solidification of liquids.

Rm 103
M-23 - Early to mid 90's this area was used to prep samples for isotopic mass spec analysis. This was an inorganic analysis for the determination of the isotopic content of transuranic in samples. Not performed to much after 1996.

M-36 - Further preparation of samples from M- 38.

M-21 - Early 90's this box was used to prep samples for X-ray fluorescence. No organics were used. In the mid 90's this box was used to store samples and to perform particle size analysis. No chemicals were used for this process. Finally in 2003 this box was cleaned out and converted over to contain the autosampler for a new GC/MS for volatile analysis. Prep was performed in another box. This box contained the sealed., prepared samples.

If you have questions or I missed a box let me know.

Mark Brugh
Laboratory Manager
phone: (303)966-7709 cell: (303)994-1259
mark.brugh@rfets.gov